## ABSTRACT OF THE DISCLOSURE

Disclosed is a method of selectively inhibiting the growth of malignant cells in mammals, including humans. The method selectively inhibits the growth of malignant cells of all varieties, and is particularly useful in treating brain tumors and other malignancies of the central nervous system. The method employs HSV-1-derived vectors containing a DNA having a deletion in both copies of the LAT gene and both copies of the ICP34.5 gene of HSV-1. The vectors are delivered to malignant cells either in vivo or in vitro, in accordance with the method. The HSV-1-derived expression vectors are non-neurovirulent and do not spontaneously reactivate from latency, and they optionally contain a functional HSV thymidine kinase gene, which can enhance the effectiveness against cancer of drug treatment with gancyclovir or acyclovir. Alternatively, the HSV-1-derived vectors contain at least one transcriptional unit of a LAT promoter sequence operatively linked to a nucleic acid having a nucleotide sequence encoding a polypeptide toxic for cells expressing the vector, for example, human interferon-γ. A method of expressing in a mammalian cell a gene encoding a preselected protein, a method of treating a genetic defect, and a method of detecting an HSV-1 expressing cell also employ vectors of the present invention that contain at least one transcriptional unit of a constitutive LAT promoter operatively linked to and controlling the transcription of a gene encoding a preselected protein. Also, disclosed are kits for expressing in a mammalian cell a gene encoding a preselected protein, useful for practicing the methods, and mammalian cells containing the HSV-derived vectors.